{In Archive} Re: A Request

Jose Torres to: Muhammadali Abbaszadeh 02/23/2010 03:00 PM
Cc: Philip Dellinger, Ray Leissner, bknape

From: Jose Torres/R6/USEPA/US
To: "Muhammadali Abbaszadeh" <MABBASZA@tceq.state.tx.us>,
Cc: Philip Dellinger/R6/USEPA/US@EPA, Ray Leissner/R6/USEPA/US@EPA, bknape@tceq.state.tx.us
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Hello Mr. Muhammadali:

I hope everything is going well for you. I want to take this opportunity to again thank you for your assistance in clarifying the meaning of the symbolism used on the maps found in URI's quarterly Restoration Operations Report, which is part of the information I gathered during my latest file review last Fall. The information you provided has proven very helpful as I attempt to understand the meaning of these reports.

As I continue to review this information, I have come up with several questions, which I hope you may be able to help me find answers for. Please keep in mind that I have not as yet had the opportunity to receive any expert orientation on the details of restoration operations at uranium in-situ solution mining sites. I will use several illustrations in an effort to better convey to you what issues I am trying to resolve.

The attachment labeled "100211URIsKVDpa2-pa1_01cps" is Figure 1 in URI's Restoration Activities Progress Report for the 2nd Quarter, 2009. This figure shows a map of segments of the Kingsville Dome mining site known as Production Area 1 (PA-1) and Production Area 2 (PA-2).

In order to better understand the contents of the Progress Report, I would appreciate your assistance with our efforts for obtaining a map identifying the location of the well fields within these production areas, that is, a map similar to that of Production Area 3 (PA-3) shown in the attachment labeled "100219URIsKVDpa3WellFields". So, my first question to you is: Do you have a map showing the well fields within PA-1 and PA-2, which is similar to the attached PA-3 map?. If you do, I would appreciate your sharing it with us, whether in an electronic or hard copy format.

The attachment labeled "100222URIrestoReport2ndQrtr09_01" is a pdf file containing reports on the Restoration Chemistry for wells identified with the following numbers: 6331, 6170, 6157 and 6153. Upon initiating my review of the information on these wells, and based on our discussion on the symbols on these maps (see below), I accepted the notion that the triangles in the maps in the report represent injection wells and, accordingly, that Well No. 6331 should be an injection well.

However, when I looked at the map in the report for the No. 6331 well and saw a square next to the well number (I highlighted it in yellow), I became confused since this information seems to indicate that the No. 6331 well is a producer, not an injector, located in close proximity of two injection wells. After turning to the report page for Well No. 6170, I observed that Well No. 6331 is shown as an injection well on this page. What appeared to be an added producing well in the previous page (the yellow rectangle) is no longer shown on this page at all. A similar situation appears to emerge for Well No. 6157A after looking at the report pages for this well and for Well No. 6153.

The preceding discussion provides the basis for my second question: Would you be able to elaborate on the rationale behind what I perceive to be a practice of adding to the maps in the restoration reports symbols suggesting the presence of extra producing wells that may not in fact be there?. So far, I have not read every page in the progress report, and acknowledge that the answer may be somewhere in the write up portion of the report, but I have not come across it as yet. By now, you may be thinking that I am trying to teach myself the course "Restoration Operations 101", and that I am not getting too far on this

bumpy road.

My remaining questions are an outgrowth of the second one. I have been under the impression that, during restoration operations in an in-situ solution mining site, the chemistry of the produced stream at producing wells is the representative stream of the aquifer conditions resulting from these operations. Also, that injection wells are always operated as injection wells injecting the “clean” stream coming out of the Reverse Osmosis (RO) unit, and that, under this scenario, the chemistry of the injected liquid at the injection well’s sand face, at a minimum, reflects the chemistry of the “clean” stream at the RO unit’s outlet.

However, after looking closely at the subject progress report, I get the impression that injection wells are used as sampling points to test for the chemistry of the mined aquifer, or at least for the chemistry in a portion thereof, and suspect that the results of this injection well testing may play a role in the evaluation of the overall impact of the restoration operations.

The preceding conjectures regarding the use of producer and injection wells to characterize the chemistry of the aquifer in these operations leave me with the following questions, which I wish to share with you:

How is the sampling at injection wells, for the purpose of evaluating the chemistry of the aquifer, conducted?. Are these wells flowed back for a period of time (i.e.: temporarily converted to production, therefore the symbolism I mentioned above)?. If this is the case, can you elaborate on the duration of a typical flow back period?. Does TCEQ provide operators written guidelines on injection well flow back practices that ensure that the sampling will lead to results that are representative of aquifer conditions as opposed to being representative of the RO’s chemistry?. In deciding whether a site has been restored or not, how much weight is given to the chemistry reflected at the injection wells versus the chemistry reflected at the producing wells?. Are you aware of any studies/discussions that may help evaluate the merits of the used methodology for arriving at the determination that a site has been restored?. Are you in a position to share such studies/discussions with us?.

One last question: Could the observed colors of the lines connecting the wells on the maps be somehow linked to the completion intervals in those wells, being perhaps an indication that not all wells are completed in the same vertical segment of the reservoir/aquifer?.

Thank you for reading me up to this point, as you can see, I am trying to learn about “Restoration Operations 101”, and could not find an easier, shorter way to address the issues described. I am sure that you may have been already faced with questions of this nature, and can only hope that you are in a position to help me find the answers. Thank you for your consideration in this matter, I look forward to hearing from you. Best regards,

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100222URIrestoReport2ndQrtr09_01.pdf


100211URIsKVDpa2-pa1_01cps.jpg


100219URIsKVDpa3WellFields_01.jpg

Re: A Request

Muhammadali Abbaszadeh to: Jose Torres 02/12/2010 03:08 PM

Cc: Philip Dellinger

Mr. Torres,

I hope the following information will be helpful to you.

TRIANGLE: Injection well

SQUARE: Extractor/Production well

CIRCLE: Monitor Well

SHADED AREA: Ore Body

The lines connecting the wells are for the ease of identification (The lines do not mean much).

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